Slide 1 - Specifications

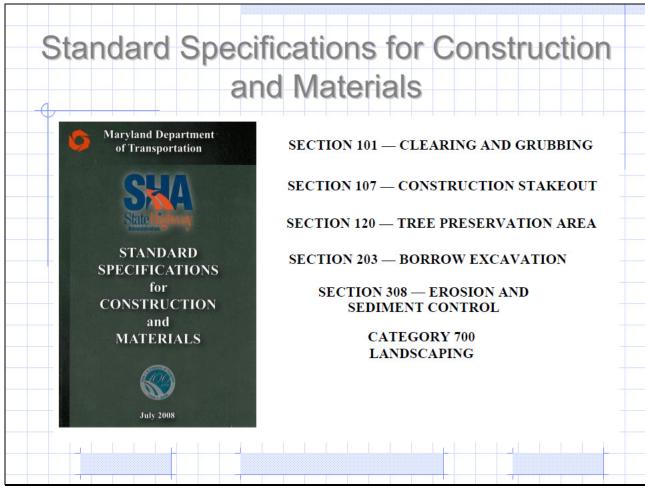


Slide notes

Now lets take a closer look at the Specifications that govern how SHA projects are to be constructed and how they relate to the environment. Take a moment to read the information presented as it has been taken directly from the 2008 Maryland specifications.

Notes			

Slide 2 - Specification sections



Slide notes

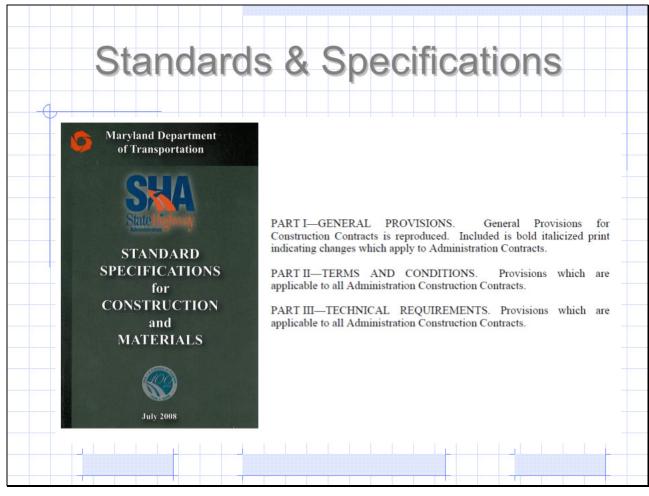
While the focus of this training is on Section 308, Erosion and Sediment control, there are several sections that relate to the environmental issues discussed in this course

- 101, Clearing and Grubbing.
- 107, Construction Stakeout.
- 120, Tree Preservation Area.
- 203, Borrow Excavation

And the 700 sections related to landscaping that will be covered in a separate module of the training.

Notes			

Slide 3 - Specification sections



Slide notes

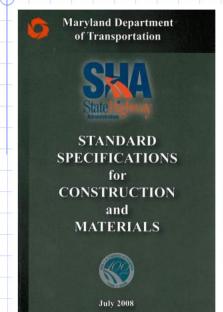
The specification book is divided into three parts.

Keep in mind that because this book is designed to be a baseline on how state highway projects are constructed and managed, other contract documents, such as the Plans and Special Provisions may override the specifications.

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Slide 4 - Governing Order





TC-3.01 GOVERNING ORDER OF CONTRACT DOCUMENTS

The Contract Documents, including but not limited to the Standard Specifications, the Special Provisions Inserts, the Plans, Special Provisions, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In the event of any discrepancy between the drawing and figures written thereon, the figures, unless obviously incorrect, will govern over scaled dimensions. In the event of any discrepancy between the various Contract Documents, the governing order from highest to lowest shall be Special Provisions, Plans, Special Provisions Inserts, and Standard Specifications.

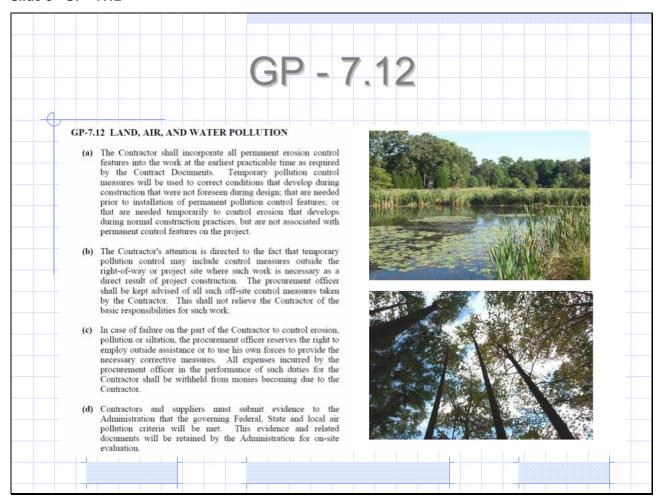
General Provisions will govern over all Contract Documents unless expressly provided for in the Contract.

Slide notes

Notes

It is important to understand the governing order of the contract documents. The specifications are the foundation that all of the other contract documents are build upon. From lowest to highest are the specifications, Special provision inserts, the plans, and finally the special provisions included within the IFB, or invitation for bids (the contract). The permits are a part of the IFB and therefore a part of the highest governing document. The general Provisions override all other contract documents unless specifically stated otherwise in the contract

Slide 5 - GP - 7.12



Slide notes

Notes

General Provision 7.12 gives guidance that all activities shall be in conformance with state and federal regulations related to environmental protection. Remember, the General Provisions override all other contract documents unless specifically stated otherwise in the contract

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Slide 6 - Section 101.01

Section 101.01

101.01 DESCRIPTION. Clear and grub within the specified limits.

(a) Clearing. The removal and disposal of trees, fallen timber and rotten wood, brush, shrubs, vegetation, rubbish, fences, and structures not specified in the Contract Documents for removal and disposal. Unless otherwise specified, clearing outside the LOD includes the removal of rubbish only.





- (b) Grubbing. An earth-disturbing activity, which includes the removing from the ground and disposing of all stumps, roots and stubs, brush, and debris.
- (c) Limits of Disturbance (LOD). The maximum allowable limit of earth disturbance as delineated in the Contract Documents. When not delineated in the Contract Documents, the LOD will be the top of cut, toe of slope, or limit of ditch excavation. Do not perform earth-disturbing activities beyond the LOD without authorization.
- (d) Limits. Clearing and grubbing is confined to the LOD and authorized modifications to the LOD. When indicated in the Contract Documents, the limit of clearing may include the area between the LOD and the right-of-way or easement lines.

Slide notes

Section 101.01 covers the clearing and grubbing operations.

Clearing and grubbing, although inclusive in the same item of work are two distinct types of operation.

Clearing is the cutting of trees and vegetation on a site but the root mass remains intact in the ground. Be careful that when using heavy equipment to clear a site that the operation does not create to much disturbance as to be considered grubbing.

Grubbing a site is the next step in the operation and involves removing the root mass, this is a major disturbance and the area is now prone to producing heavily sediment laden runoff.

Notes		

Slide 7 - Section 101.03

Section 101.03

101.03.01 Erosion and Sediment Control. Unless otherwise specified or approved, the clearing and grubbing area shall be limited to a single 20-acre grading unit per grading operation. Once this first unit is half graded and stabilization measures are in place and approved, the work may proceed to a second 20 acre grading unit. When approved by the Engineer, the clearing and grubbing area may exceed the one grading unit requirement when necessary to balance earthwork or when grading interchanges. Maintain erosion and sediment controls as specified.

The grading operation will be limited to the Contractor's ability to provide adequate resources to perform the grading in a timely manner and to provide and maintain the proper erosion and sediment control measures. The Engineer is the final authority in this determination. A grading unit need not be 20 contiguous acres. When wet soil conditions are encountered, the clearing, grubbing, and grading of another unit will be allowed, once stabilization of the initial unit is approved. No more than two grading units may be active at any time.

20 acres = 871,200 SF 300 FT wide LOD = 2,904 LF of Stationing

Slide notes

The Clearing & grubbing area shall be limited to a 20 acre grading unit per grading operation.

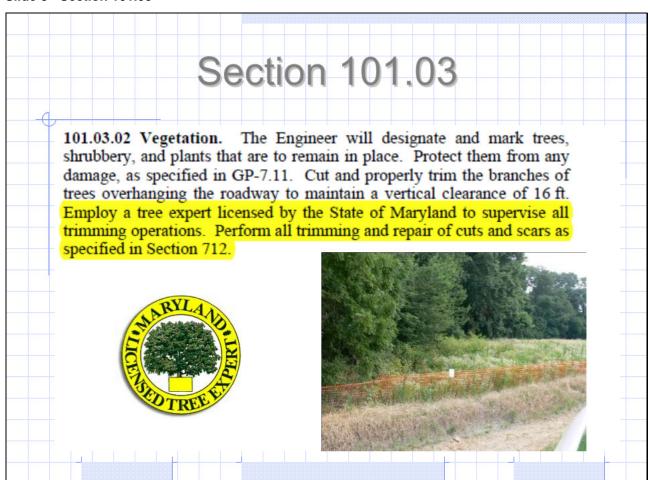
Once this 1st unit is half graded the contractor will be allowed to proceed with the 2nd 20 acre grading unit.

A contractor may be allowed to exceed the 20 acre grading unit requirement to balance earth work, or when grading interchanges. A balance earthwork project will have an earthwork summary sheet in the plans.

An example of a 20 Acre area is shown, A 300 foot wide LOD could only extend 2900 feet before the grade unit is exceeded, that's just a little over a half mile.

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Slide 8 - Section 101.03



Slide notes

Any trees that are to be protected during the construction process are to be marked and protected from damage that could occur from nearby construction. A licensed tree expert must be employed to supervise or perform any necessary trimming operations

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Slide 9 - Section 107

Section 107

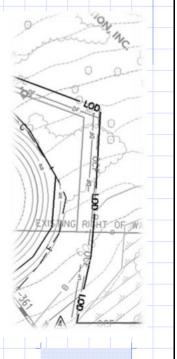
107.01 DESCRIPTION. Furnish, place, and maintain construction layout stakes. Demarcate (flag) the Limit of Disturbance (LOD), and protected resources including, wetlands, wetland buffers, waters of the United States, floodplains, and tree preservation areas.

The LOD is defined as the maximum allowable limit of earth disturbance as delineated in the Contract Documents. When not delineated in the Contract Documents, the LOD will be the top of cut, toe of slope, or limit of ditch excavation.

No clearing or earth disturbance activity may begin until the LOD and all protected resources are demarcated as specified.

107.02 MATERIALS. Refer to 107.03.09.

107.03.09 Demarcation. Perform all demarcation as specified or directed. Demarcate wetlands using the Administration's standard 1-1/2 in. pink and white striped vinyl flagging with "SHA WETLAND" printed in blue letters. Demarcate the LOD and other applicable protected resources using a minimum 2-mil vinyl that is 1-1/2 inch wide with 7/8 in. letters, and locate as directed.



Slide notes

Limits of disturbance along with any other environmental resources must be demarcated prior to clearing or earth disturbance. Failing to mark these areas as described in the specifications and as identified on the plans places a project at risk of being found in non-compliance.

Notes			

Slide 10 - Section 120

Section 120 120.01 DESCRIPTION. Establish and maintain a Tree Preservation Area (TPA). 120.03.01 Maryland Licensed Tree Expert (LTE). A LTE shall perform or directly supervise the operations specified in the Contract Documents and the TPP in conformance with the Maryland Roadside Tree Law, the Forest Conservation Act, and accepted arboricultural 120.03.02 Delineation. Delineate the perimeter of the TPA as specified in the Contract Documents. 120.03.03 Temporary Orange Construction Fence (TOCF). Ensure that the delineated TPA is approved prior to installing the TOCF. Perform installation and maintenance as specified in 104.20.03. AREA Complete installation of the TOCF before: (a) Beginning clearing and grubbing operations. AND LOCAL LAWS. Trees For Your Futu (b) Installing erosion and sediment controls. (c) Conducting the Tree Preservation Meeting. (d) Performing tree preservation operations.

Slide notes

Tree preservation areas must be clearly marked prior to activity on the project; this is to ensure that the areas are not mistakenly cut as a part of the clearing operation. Temporary orange construction fence is typically utilized for this delineation.

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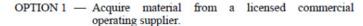
Slide 11 - Section 203

Section 203

203.01 DESCRIPTION. Furnish, excavate, haul, and place approved materials for embankments and backfills when sufficient quantities of suitable materials are not available from other excavations specified in the Contract Documents. This includes all work prescribed for backfills, embankments, subgrade, and earth shoulders, all necessary clearing and grubbing, the removal and disposal of overburden or other unsuitable spoil material, and the trimming, shaping, dressing, draining, and reclamation of the pit or location from which borrow material is secured. Refer to 201.03.02 before securing borrow.



203.01.01 Contractor's Options. As a duly authorized agent of the Administration, select one of the following three methods to obtain borrow material for use on public highway contracts:



OPTION 2 — Make application to the Maryland Department of the Environment under the Annotated Code of Maryland, Environment, Subtitle 8, entitled "Surface Mining".

OPTION 3 — Make application to the Administration to operate under the standard adopted in conformance with the Annotated Code of Maryland, Environment, Subtitle 8, Surface Mining, Subsection 15-834 entitled



Slide notes

Earth disturbance in the state of Maryland is considered surface mining by M.D.E., therefore when a contractor is bringing excavated material (borrow) to a construction project it must be coming from a mine somewhere in the state, this could also include a local farmer that may be selling the material from their land.

When a contractor is to bring Material to an S.H.A. project site they must inform the Administration of the material's source location and what option they are selecting to work under.

Option 1 would be when a contractor purchases the material from a licensed operator such as a quarry.

With option 2 the contractor would submit an application directly to M.D.E to operate a mine and supply the material to S.H.A.

Option 3 is selected when a contractor would like to operate a mine to supply material to an S.H.A. project without going through the M.D.E. application process. This is material excavated that is not already included in an approved permitted plan of some type. When option 3 is chosen by the contractor the material can only be utilized on that specific administration project and cannot be utilize elsewhere or sold privately.

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Slide 12 - Section 203

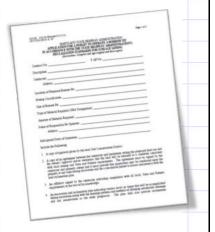
Section 203

203.01.02 Notice to Contractor—Borrow Pits. If proposed, a borrow pit may be established on privately owned property. The Administration may grant an "Exemption for a Surface Mining Permit" normally issued by the Maryland Department of the Environment, Water Management Administration (WMA). Before a permit can be granted, submit written proof to the Administration that all local permits or approvals have been secured for the borrow pits.

An exemption under Option 3 will require approval of an excavation and reclamation plan along with the drainage patterns and methods of attaining satisfactory drainage and soil conservation as the work progresses. The plan shall provide for surface restoration suitable for the proposed subsequent land use after reclamation is completed and the proposed method of accomplishment.

203.01.03 Borrow Pits Within Jurisdictional Resources. Borrow pits located within tidal or nontidal wetlands, waterways, and 100 year floodplains require approval by the appropriate Federal and State Authorities. Obtain and provide all required permits.

If the pit is in operation and the Administration discovers that the work does not meet these regulations, the Administration will notify the contractor to make the necessary corrections and all other operations shall cease until the work is in compliance.



Slide notes

Notes

When the contractor selects to use option 3 an OOC 63 form is utilized for approval.

There is specified information that must be provided by the contractor as stated in the specifications such as a work plan and reclamation plan. This area will be monitored by SHA just as if it were part of the construction site.

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Slide 13 - Section 308.01

Section 308.01

308.01 DESCRIPTION. Apply erosion and sediment control measures to all disturbed areas throughout the life of the project to control erosion and to minimize sedimentation in rivers, streams, lakes, reservoirs, bays, and coastal waters.

Implement the approved Erosion and Sediment Control Plan and any approved modifications to the plan.

Identify staging and stockpile areas, and apply erosion and sediment control measures as approved by the Engineer and the Maryland Department of the Environment (MDE).



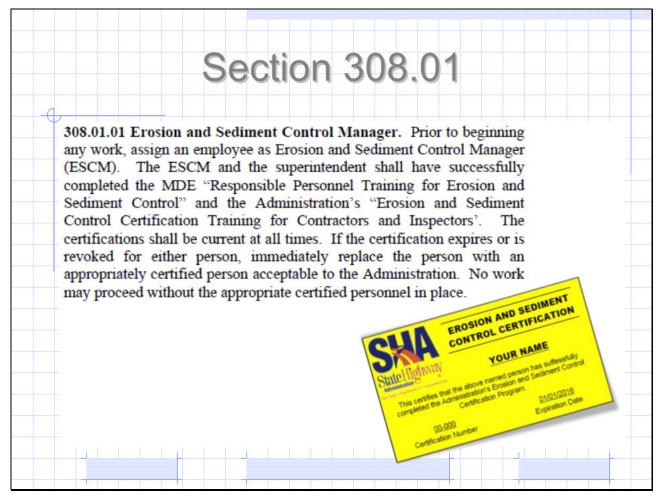
Slide notes

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The specifications require that erosion and sediment controls be installed and maintained throughout the life of the project. The E and S plan is to be followed as it is a part of the contract documents. Note that stockpile and staging areas are to be identified and approvals are necessary.

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Slide 14 - Section 308.01

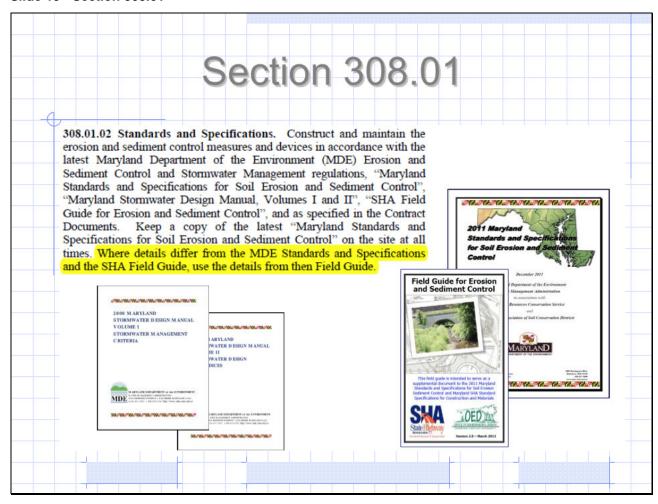


Slide notes

Both the Erosion and sediment control manager as well as the superintendent on the project shall have successfully completed the MDE Responsible Personnel Training for E&S Control and the SHA E&S Control Certification, Yellow Card. Individuals without this certification cannot work in these capacities on an SHA project.

Notes		

Slide 15 - Section 308.01



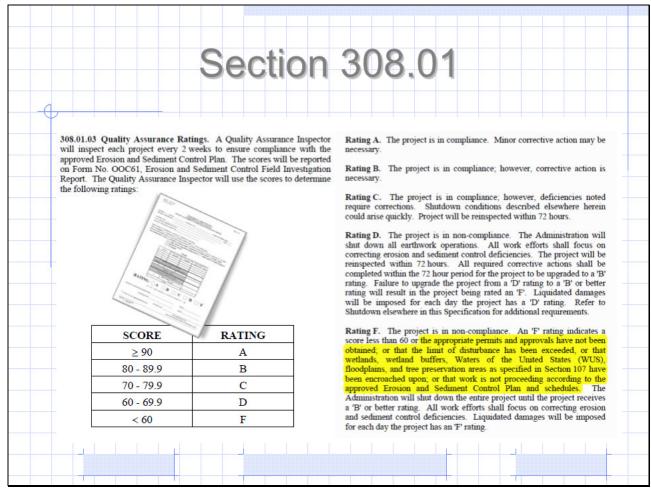
Slide notes

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Section 308.01 covers the reference documents utilized for installation and maintenance of environmental features or controls. Note that when there is a difference between the MDE specifications and the SHA field guide, the field guide is to be utilized as the governing document. SHA details will always match or exceed MDE specifications.

Notes		

Slide 16 - Section 308.01



Slide notes

The Quality Assurance program has a responsibility to review and grade construction projects to ensure compliance with the approved plans. It is important to understand that there are 3 responsibilities that the contractor must fulfill in order for the project to remain in compliance with the program.

The Contractor must obtain all appropriate permits and approvals; this would be offsite permits such as for stockpiles or waste disposal. The contractor must demarcate the Limits of Disturbances, wetland and wetland buffers, floodplains and tree protection areas as specified in Section 107, and proceed according to the approved E&S Control Plan and schedules.

Projects will be inspected every 2 weeks at a minimum and be given one of the following ratings: (Ae, B, C, D or F)

Work shall proceed according to the approved E&S Control plan and schedules

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Slide 17 - Section 308.03

Section 308.03

308.03.01 Contractor Responsibilities. Prior to beginning any earth disturbing activity, complete the following:

- (a) Demarcate all wetlands, wetland buffers, floodplains, waters of the United States, tree protection areas, and the Limit of Disturbance (LOD) as specified Section 107.
- (b) Have all demarcated wetlands, wetland buffers, floodplains, water of the United States, tree protection areas, and LOD inspected and approved by the Engineer.
- (c) Construct all erosion and sediment control measures in conformance with 308.01.02.
- (d) Have all control measures inspected and approved by the Engineer.

Ensure that all runoff is directed from disturbed areas to the sediment control measures.

Do not remove any erosion or sediment control measure without the approval of the Engineer and MDE. Refer to GP-7.12 for unforeseen conditions.

Ensure that dewatering practices do not cause any visible change to stream clarity.

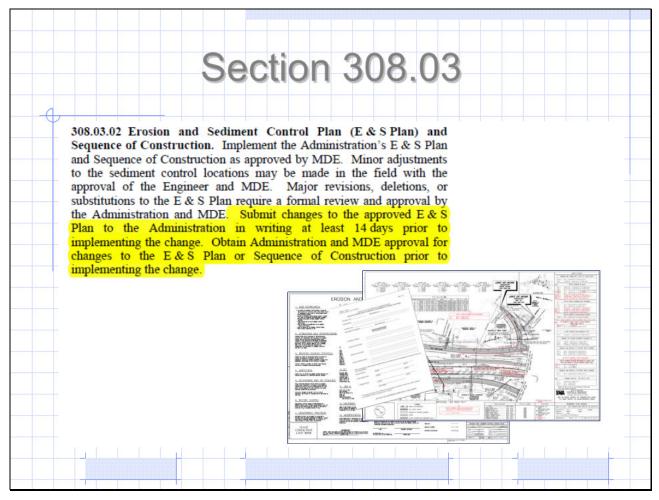


Slide notes

As stated before, the contractor must demarcate all environmental resources and install E and S controls prior to beginning any work.

Notes _____

Slide 18 - Section 308.03



Slide notes

As discussed in the organization part of this training a modification to the plan is possible. The proper information needs to be submitted and approved prior to proceeding with the work. Ensure that a reasonable timeframe is allowed for such modifications in order to not delay the work anymore than necessary. Specifications require a minimum of 2 weeks for a modification submittal.

Notes			

Slide 19 - Section 308.03

Section 308.03 308.03.04 Schedule. Within 14 days after the Notice of Award, submit an Erosion and Sediment Control Schedule to implement the E & S Plan to the Administration and the MDE. Ensure that the schedule indicates the sequence of construction, implementation and maintenance controls, temporary and permanent stabilization, and the various stages of earth disturbance. Any changes to the MDE approved Plan require concurrence from MDE in addition to the Administration's approval. Include the (a) Demarcation of all wetlands, wetland buffers, juriditional waters, floodplains, tree protection areas, and the LOD prior to any earth disturbing activity. (b) Clearing and grubbing of areas necessary for installation of perimeter controls specified in the Contract Documents. (c) Construction of perimeter controls specified in the Contract Documents. (d) Remaining clearing and grubbing. (e) Roadway grading (including off-site work). (f) If applicable, utility installation and whether storm drains will be used or blocked after construction. Work is prohibited on-site and off-site until the Erosion and Sediment (g) Final grading, landscaping, and stabilization. Control schedules and methods of operation have been accepted by the (h) Removal of perimeter controls Administration and MDE.

Slide notes

The contractor must submit an erosion and sediment control schedule to implement the E and S plan, this is to be submitted to the administration within 14 days after the notice of award.

Notes		

Slide 20 - Section 308.03

Section 308.03

308.03.05 Preconstruction Conference. Present a general overview at the Preconstruction Conference of how erosion and sediment control measures will be implemented on the project.

308.03.06 Meetings. At least seven working days prior to the start of work, the Engineer will initiate and conduct an Erosion and Sediment Control Field Meeting which will include the ESCM, the Administration and MDE.

In addition to the initial Erosion and Sediment Control Field Meeting, periodic in-field Erosion and Sediment Control Meetings will be held to review and evaluate the effectiveness of measures already installed, and to plan for the implementation of necessary controls proposed for succeeding areas of soil disturbance.

Slide notes

Meetings allow for the project stakeholders to look at specific contract language and interpretation for all parties to agree on. With changing environmental regulation and measurement, agenda flexibility and dedicated resources need to be considered. The Pre construction and a separate E and S control field meeting are required.

Routine meetings may be necessary throughout the life of the project depending on the scope of work and resources concerned.

Notes			

Slide 21 - Section 308.03

Section 308.03

308.03.07 Initial Controls. Install all perimeter controls such as silt fence, earth dikes/swales, check dams, traps, and basins, prior to the grubbing operation. Typically, no controls are required during the clearing operation.

If the Engineer determines that the clearing area has been disturbed and a potential for sediment runoff or erosion exists, install the controls at that time as directed.

Slide notes

Install Perimeter Controls prior to grubbing. Ensure that, As stated earlier, when using heavy equipment to clear a site that the operation does not create so much disturbance as to be considered grubbing.

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Slide 22 - Section 308.03

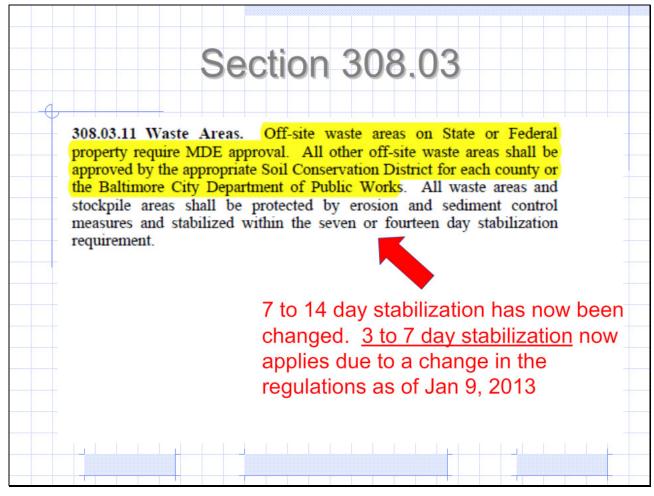
Section 308.03 308.03.03 Erosion and Sediment Control Manager (ESCM). At least 10 days prior to beginning any work, submit the name and credentials of the ESCM for approval. Any substitutes for the ESCM will be subject to approval. Time the substitution to ensure that an ESCM is assigned to the project at all times. The Administration reserves the right to request a reassignment of the ESCM duties to another individual for any reason. Ensure that the ESCM is thoroughly experienced in all aspects of construction and has the required certifications. The ESCM is primarily responsible for and has the authority to implement the approved erosion and sediment control plans, schedules and methods of operation for both on-site and off-site activities. The ESCM's duties include: (a) Inspect the erosion and sediment controls on a daily basis to ensure that all controls are in place at all times and to develop a list of activities and schedules to ensure compliance with the Contract (b) Maintain a daily log of these inspections, including actions taken, and submit a written report at the end of the work day. (c) Conduct after storm inspections with the Engineer both during and beyond normal working hours and submit a written report. (d) Have the authority to mobilize crews to make immediate repairs to the controls during working and nonworking hours. (e) When requested, accompany the Engineer on Quality Assurance Inspections and inspections made by the regulating agencies. (f) Coordinate with the Engineer to ensure that all corrections are made immediately and that the project is in compliance with the approved plan at all times

Slide notes

Prior to beginning any work, The contractor must assign an employee as Erosion and Sediment Control Manager (ESCM). The ESCM has many responsibilities including reviewing the site daily to ensure proper E and S control maintenance along with documenting that review to submit to the project engineer. The ESCM's daily report is to be completed and given to the project engineer at the end of each work day.

Notes			

Slide 23 - Section 308.03



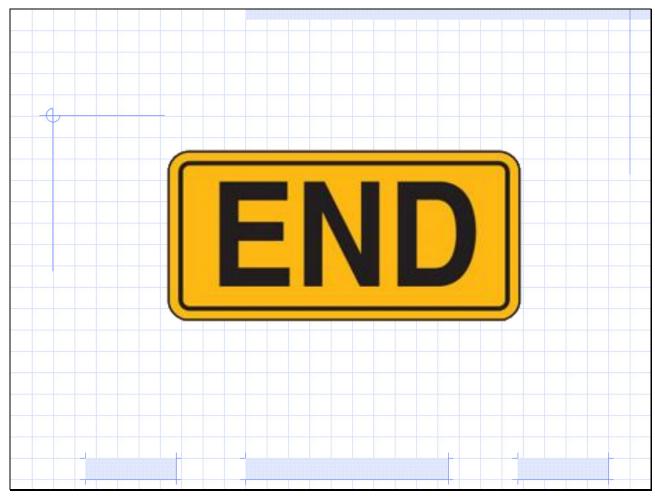
Slide notes

Off site waste areas must have permits or approvals, if you are unsure about what permits are necessary please contact your project engineer or regional environmental coordinator, QA representative.

Note the change in the stabilization specifications, this information will be discussed in the field guide portion of the training.

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Slide 24 - End



Slide notes

This completes the specification portion of the Yellow Card certification. To continue with the training please select the next coarse module.

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